SPECIFICATION

Please replace numbered paragraphs of the specification with the correspondingly numbered paragraphs below:

[0004] As a common diffraction grating element, a surface relief-type diffraction grating element, comprising a transparent flat plate and a diffraction grating formed on one surface of the flat plate, is known. The surface relief-type diffraction grating element can ~~be~~ obtain a high diffraction efficiency with respect to both of TE polarized light and TM polarized light by optimizing the shape of this diffraction grating. The diffraction grating element disclosed in the U.S. Patent Application No. 2002 - 0135876 (Document 1) is directed to a bonded structure type diffraction grating element comprises a further transparent flat plate bonded to the diffraction grating surface of the above-mentioned surface relief-type diffraction grating element, capable of obtaining a high diffraction efficiency with respect to both of TE polarized light and TM polarized light. Furthermore, the diffraction grating element disclosed in the Japanese Patent Laid-open No. 58-198006 (Document 2) is directed to a buried structure type diffraction grating element comprising a diffraction grating formed at the interface between a first medium and a second medium, and having the object to improve diffraction efficiency by adopting thus a structure.

[0050] However, when the element is designed in such a manner that the Bragg condition or the condition near the Bragg condition is satisfied, high diffraction characteristics are obtained, and moreover, since the respective emission angles of the transmitted zero-order light, the transmitted first-order diffraction light and the reflected first-order diffraction light are mutually

equal, the anti-reflection films 13, 14 can be formed readily. In this regard, the reflected first-order diffracted light propagates in the opposite direction to the traveling direction of the incident light at the wavelength that the Bragg condition is satisfied. This matter may ~~causes~~ cause an undesirable case in practical use. Therefore, although the Bragg condition is satisfied at some wavelengths within the used wavelength band, the used wavelength is desirably set in such a manner that it does not satisfies the Bragg condition. For example, taking the used wavelengths to be $\lambda_1, \lambda_2, \lambda_3, \ldots, \lambda_n, \lambda_{n+1}, \ldots, \lambda_N$, in ascending order, the wavelength satisfying the Bragg condition should be set to $(\lambda_n + \lambda n+_1)/2$.

[0066] This optical communications system 100 operates in the following manner. In the optical transmitter 110, the signal light outputted from the respective light sources 111 – 114 is multiplexed by the optical multiplexer 115, and is outputted to the optical fiber transmission line 140. At the optical repeater 120, the multiplexed signal light arriving ~~it~~ after propagating through the optical fiber transmission line 140 is amplified by the optical amplifier 121, and the power at each wavelength is equalized by the gain equalizer 122, whereupon the amplified signal light is outputted to the optical fiber transmission line 150. Furthermore, the power of the signal light at each respective wavelength outputted to the optical fiber transmission line 150 is monitored by the spectral detector 124, and the operation of both of the optical amplifier 121 and the gain equalizer 122 is controlled on this basis of the results of this monitoring, whereby, even when the number of channels in the signal light arriving at the optical repeater 120, or the like, the power of the signal light at each wavelength outputted to the optical fiber transmission line 150 will be equalized. In the optical receiver 130, the multiplexed signal light arriving at the receiver after propagating through the optical fiber transmission line 150 is inputted via the

optical circulator 136 to the dispersion adjuster 137, and dispersion of the inputted light is compensated by the dispersion adjuster 137. After dispersion-compensating, the light is inputted to the optical demultiplexer 135 by way of the optical circulator 136. The multiplexed signal light inputted to the optical demultiplexer 135 is demultiplexed into respective wavelengths by the optical demultiplexer 135, and the respective wavelength components are received by the photoreceptors 131 – 134.